



L2 Retrievals from L1B and L1C

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Objective and Selected Set of Products

- Compare L2 means and extremes retrieved from L1B and from L1C
- Temperature and Water Vapor at different pressure levels and atm. heights
- March 1, 2014 products from v6.x (Evan Manning)
- Check different quality controls (QCs)

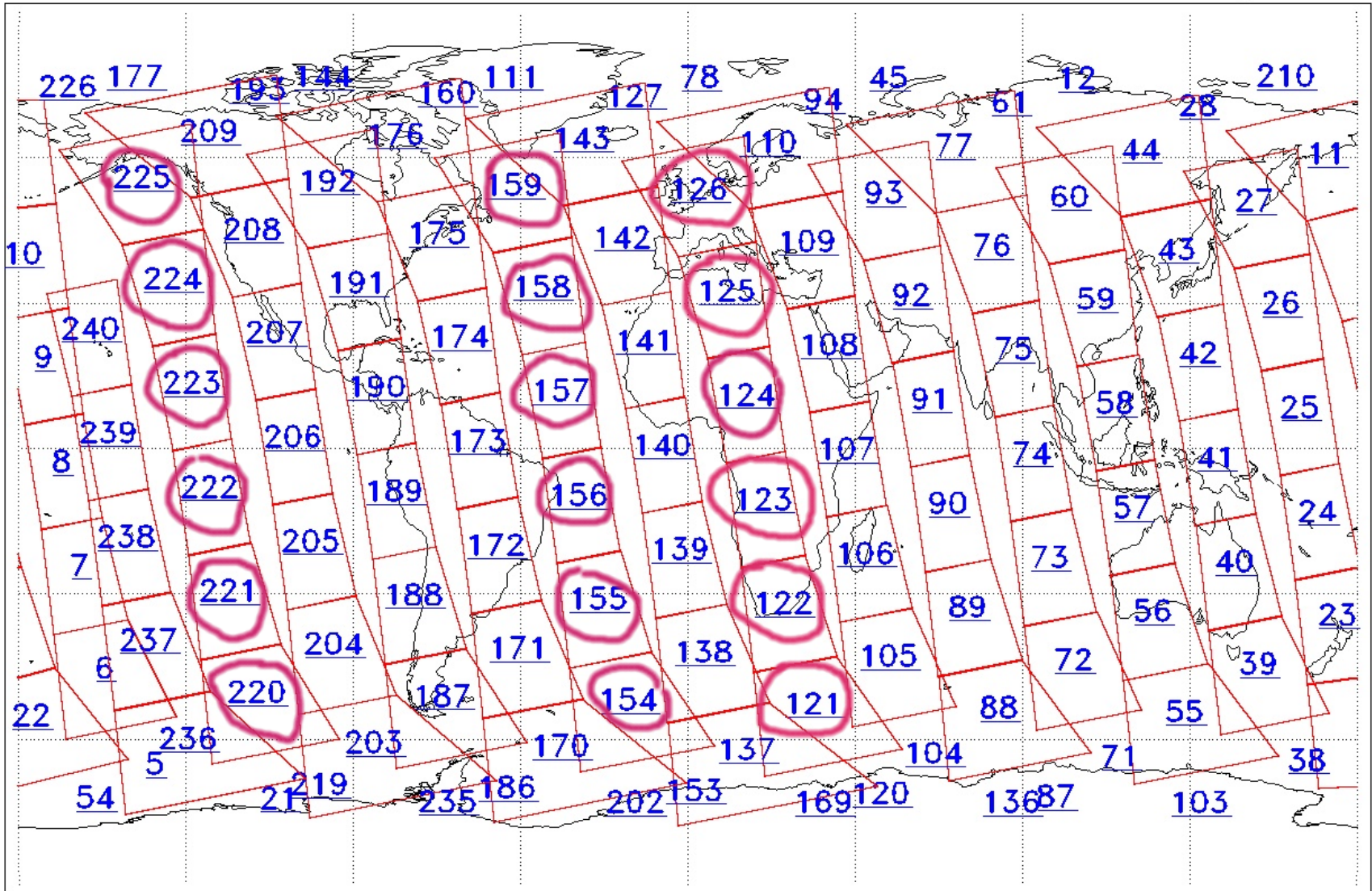
Why Use L1C for L2 ?

- L1C removes spurious outliers
- Provides better input for training sets (Neural Net) used in the prior
- Offers more channels for potential retrievals

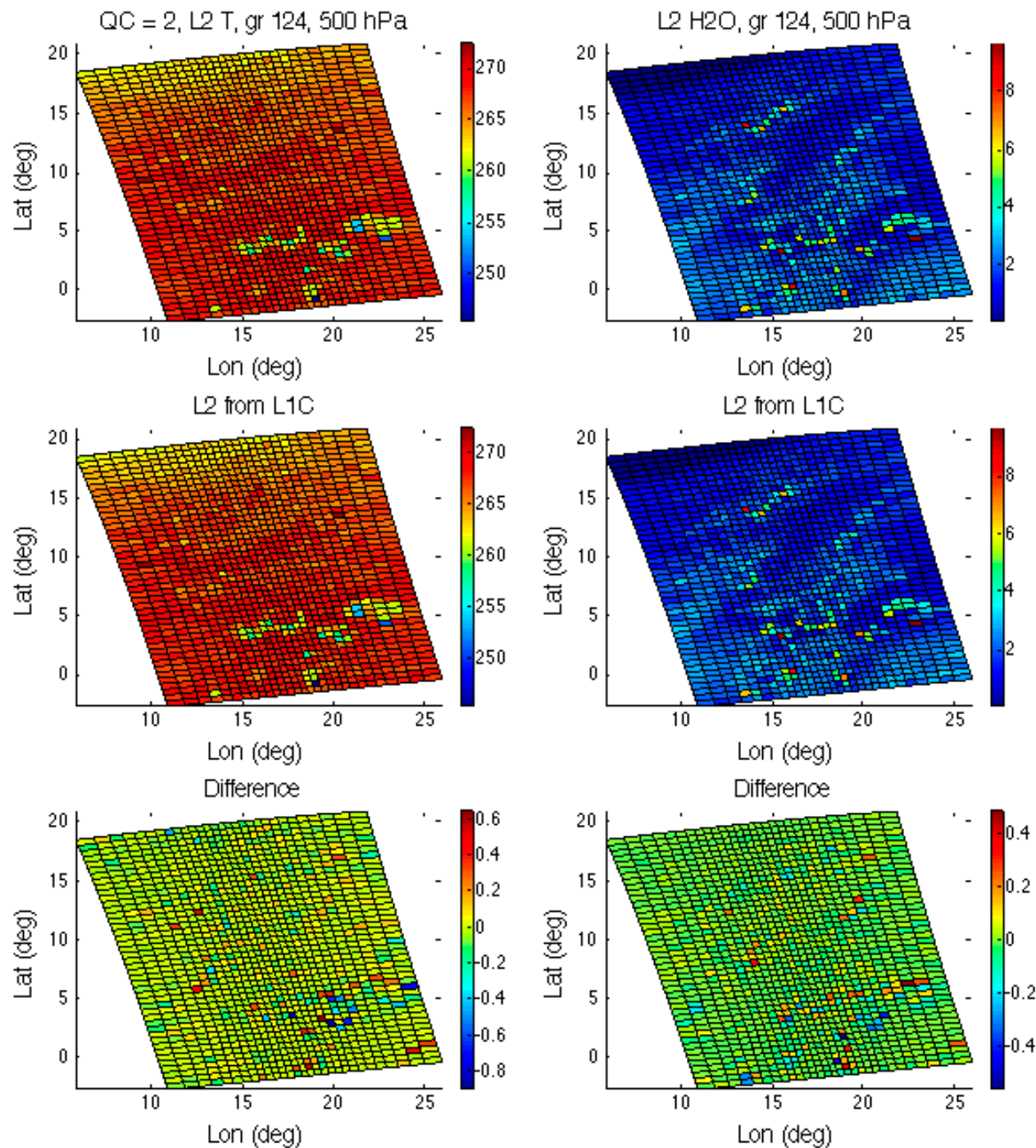
Selected Granules

L1B Availability
AMSU Granules: 240
HSB Granules: 0
AIRS Granules: 240

1 Mar 2014
DoY 60
Aqua Day 4319
Ascending Granules



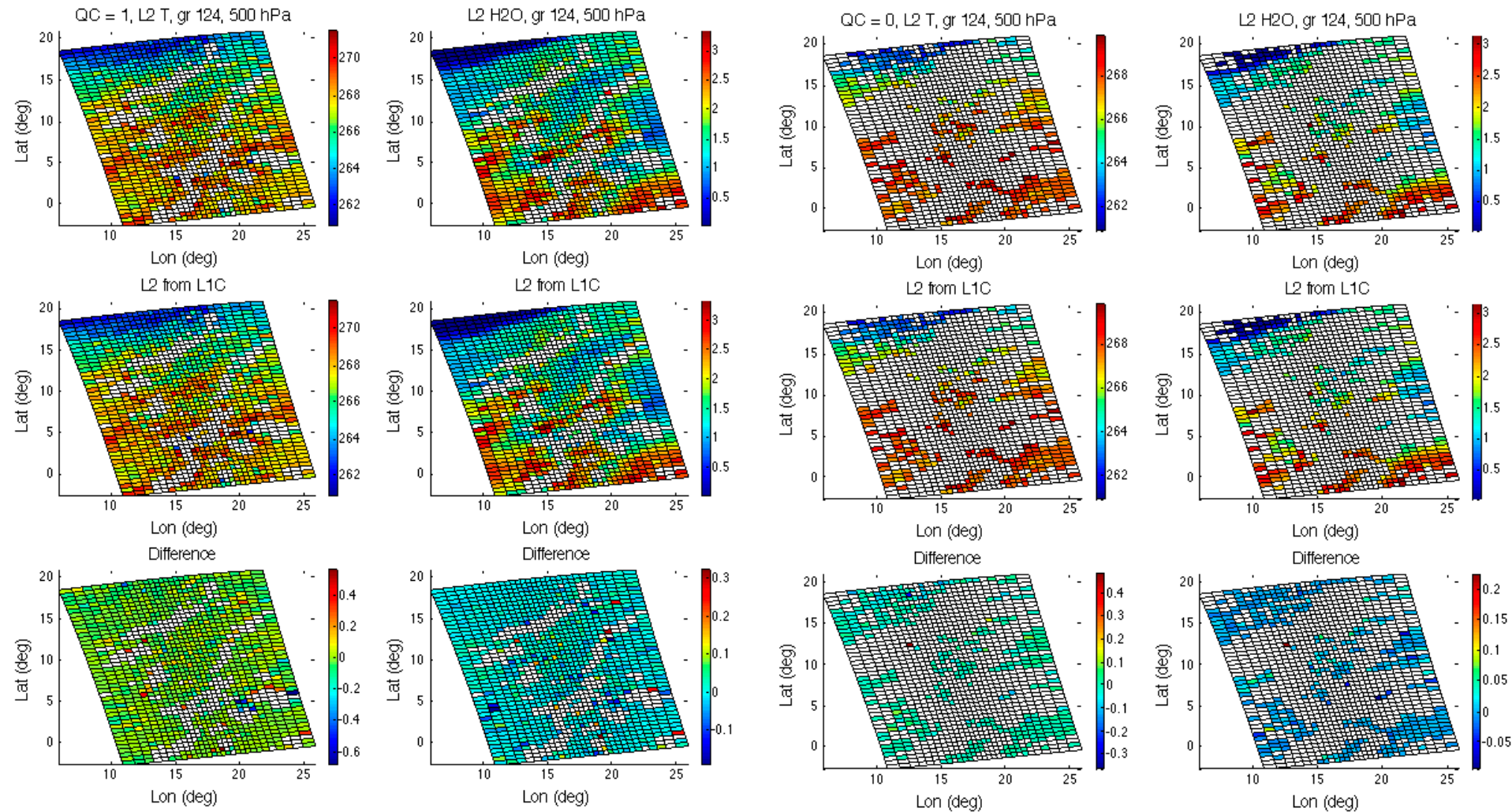
Land
Africa
all data



Add Quality Controls

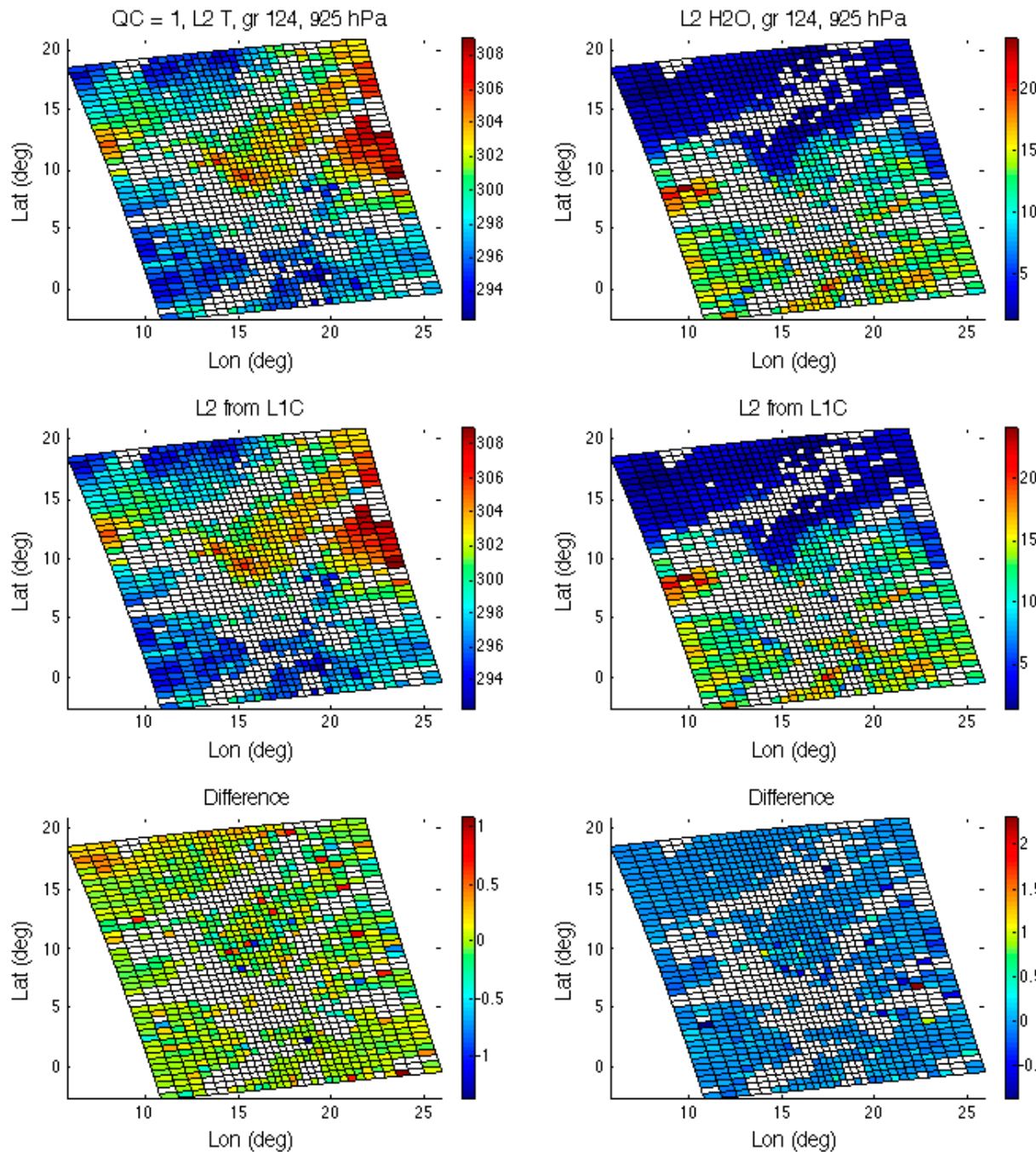
QC = [0 1]

QC = 0

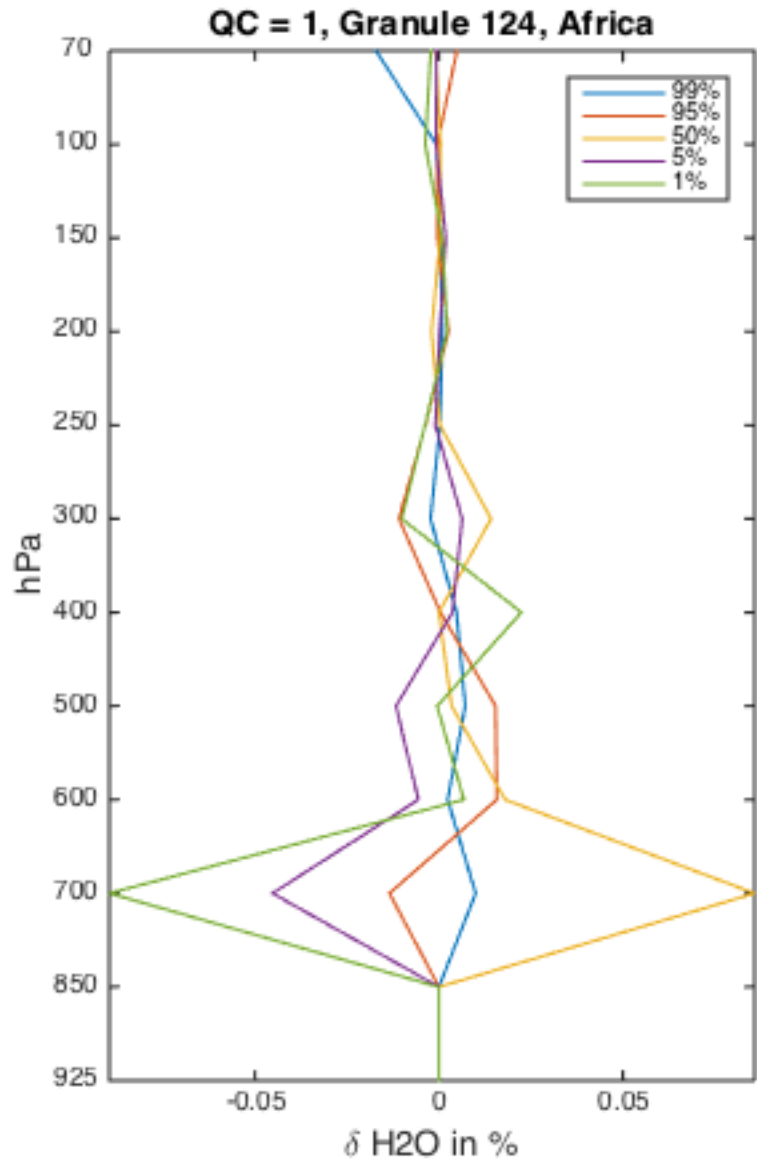
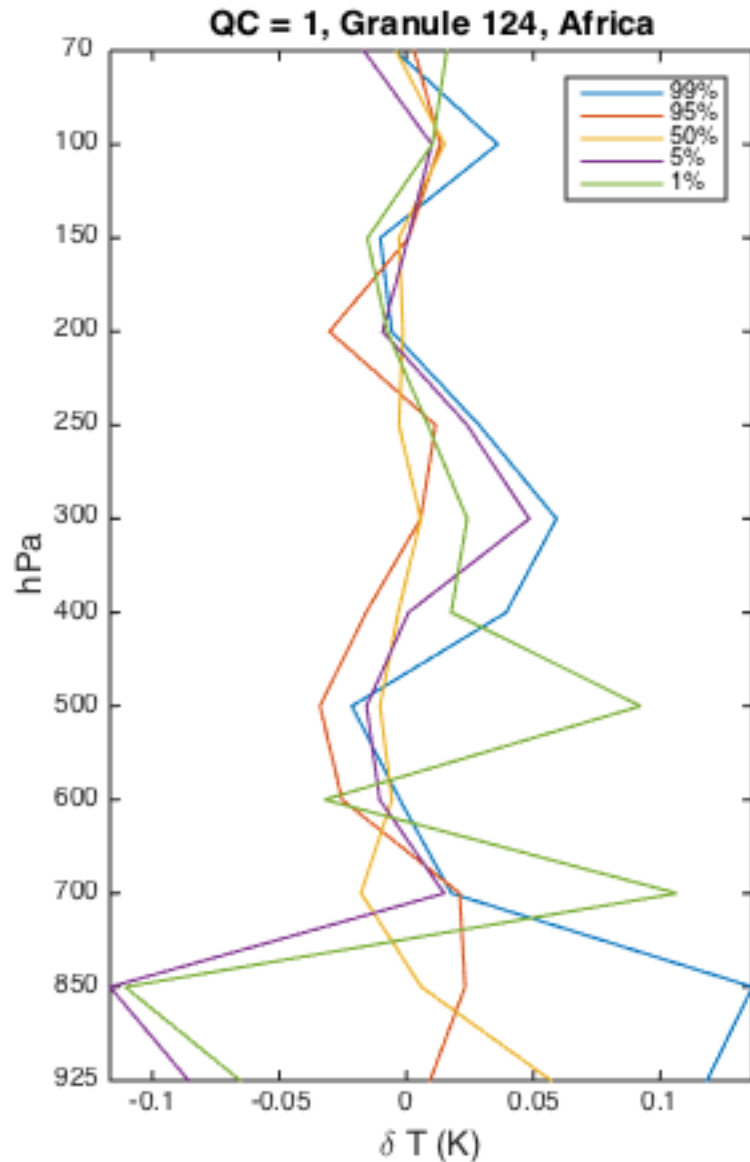


Near
surface

$$QC = [0 \ 1]$$

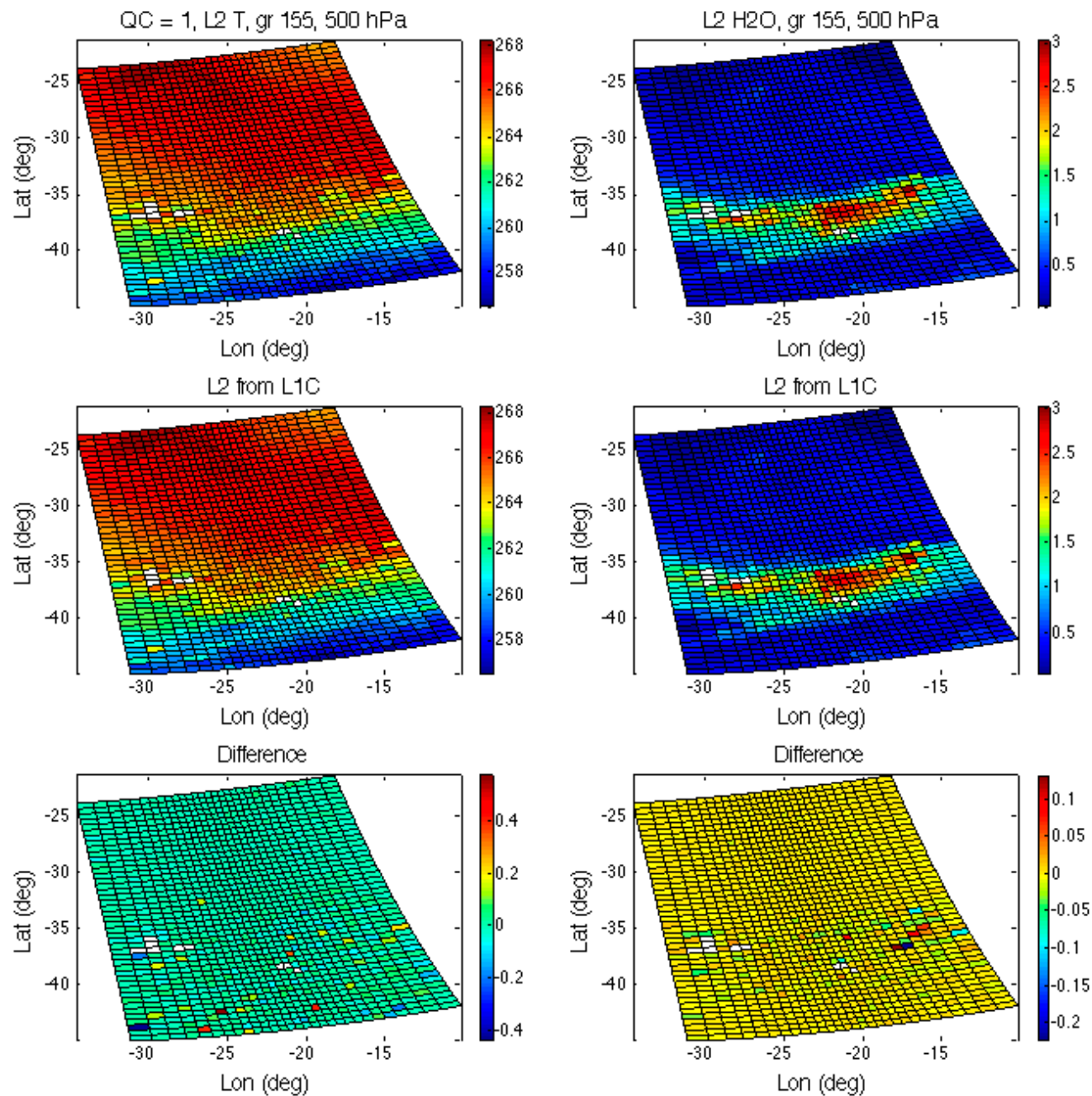


Means & Extremes at Atm. Heights



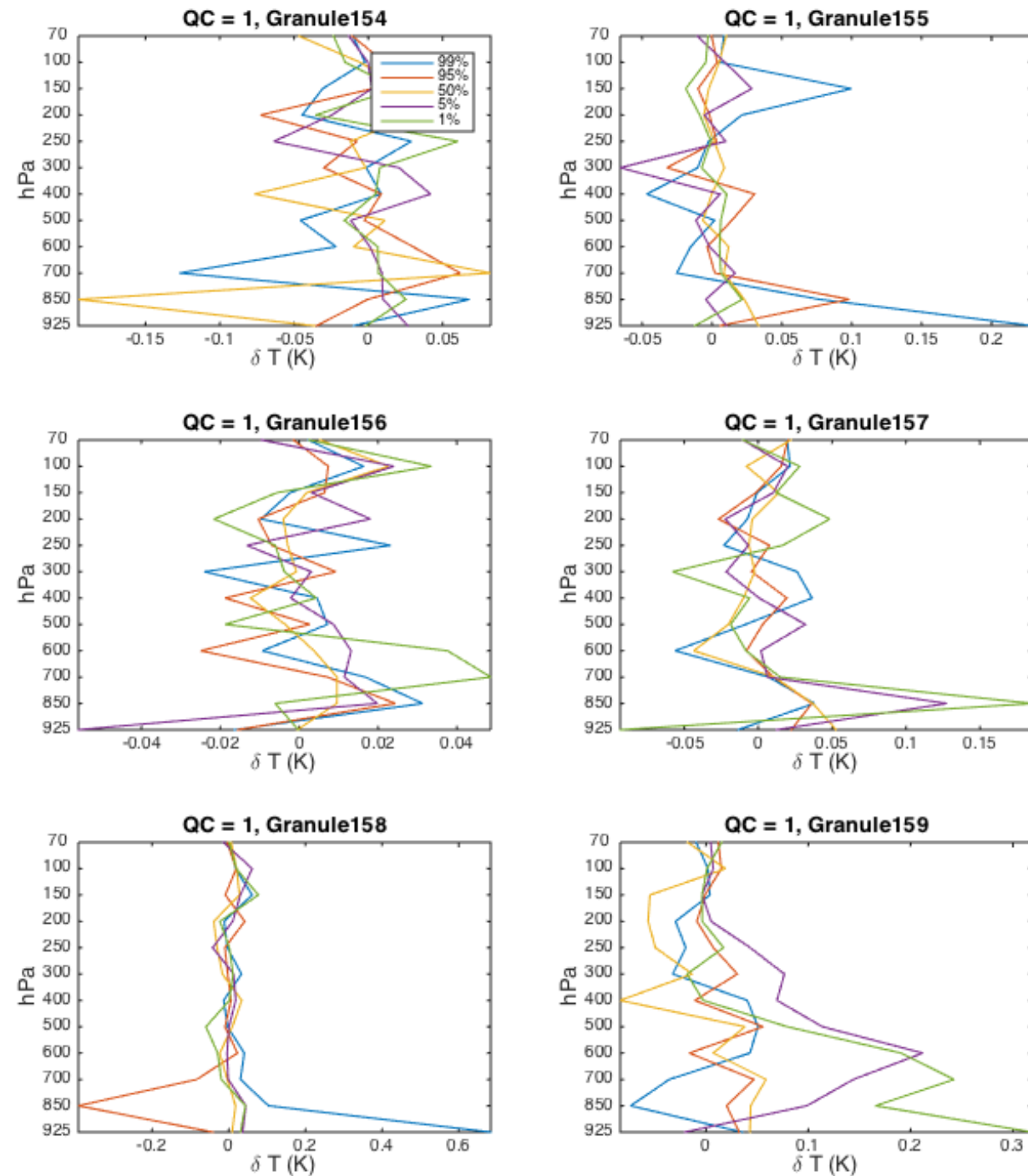
Ocean Atlantic

$$QC = [0 \ 1]$$



Ocean
Atlantic

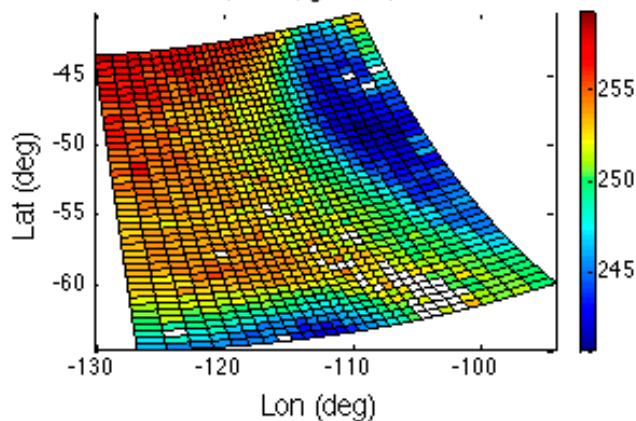
At atm.
heights



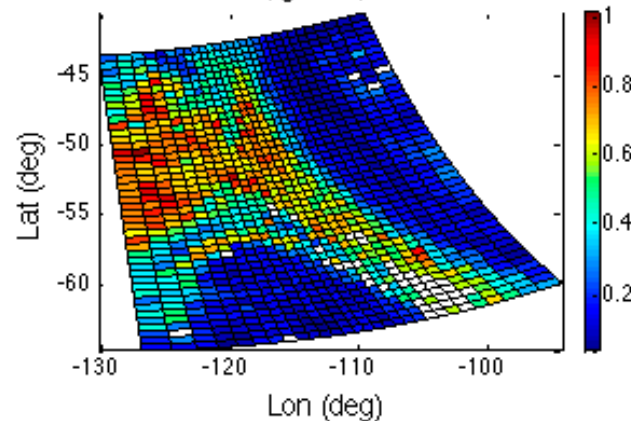
Ocean Pacific

$$QC = [0 \ 1]$$

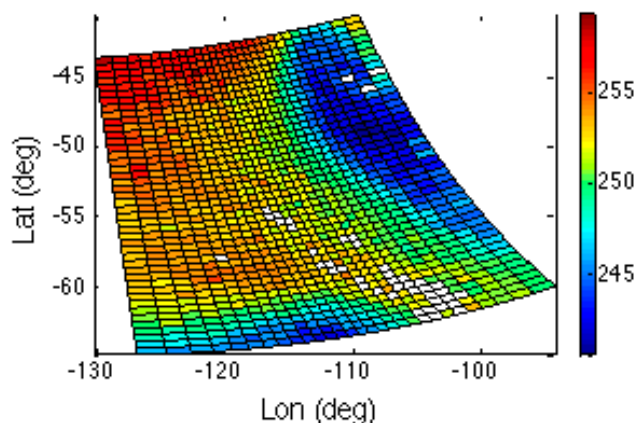
QC = 1, L2 T, gr 220, 500 hPa



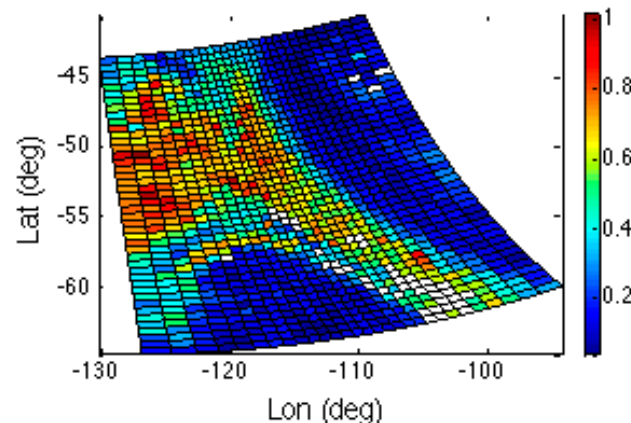
L2 H2O, gr 220, 500 hPa



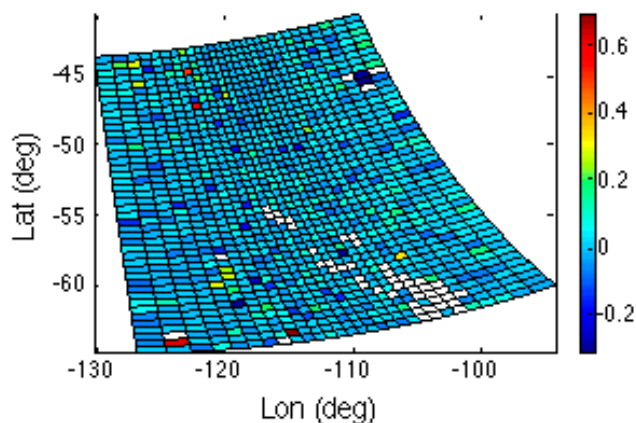
L2 from L1C



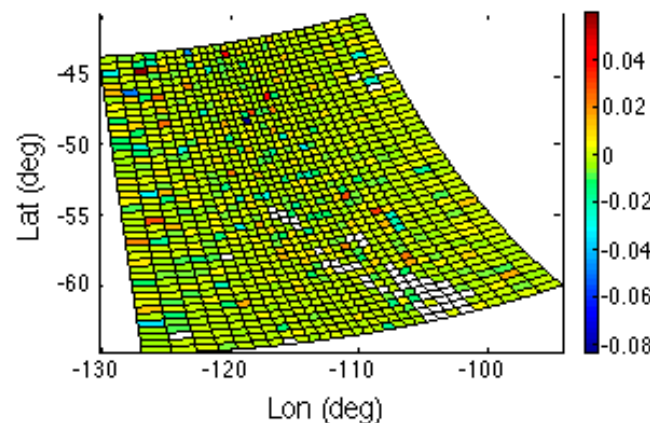
L2 from L1C



Difference

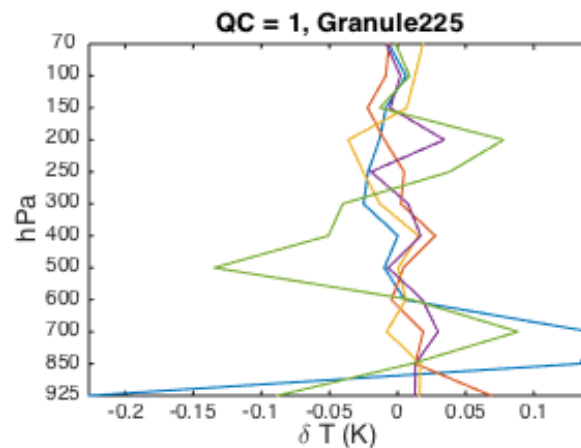
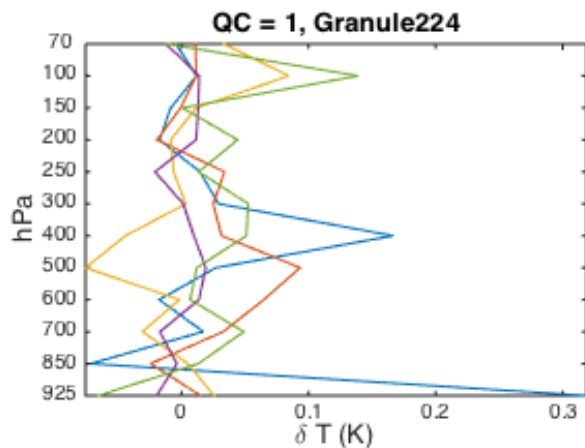
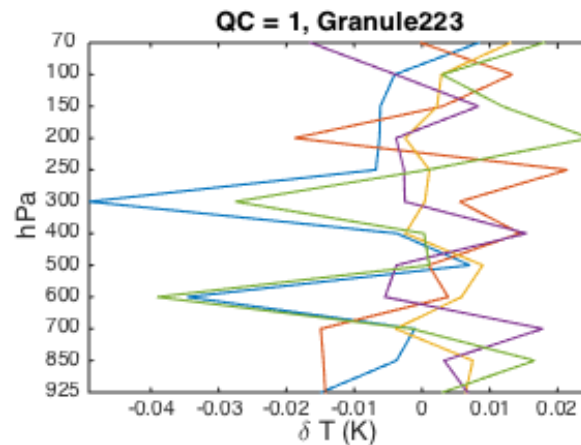
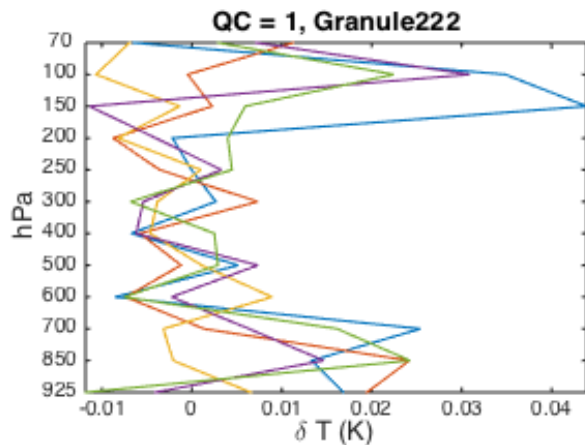
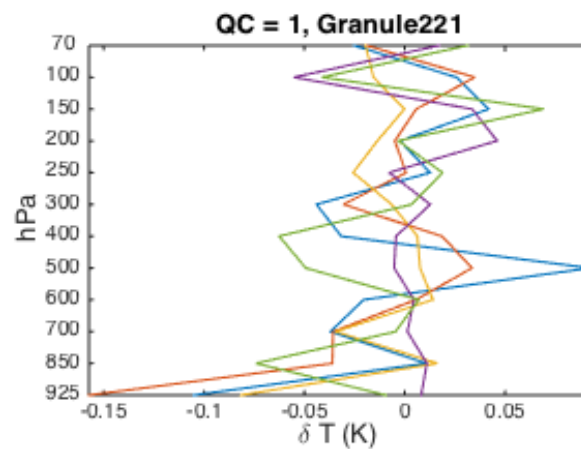
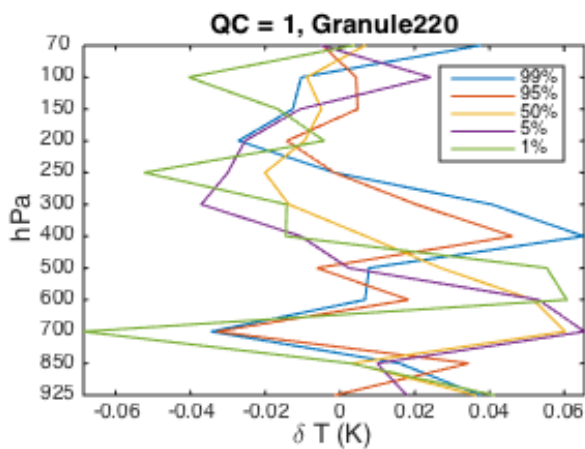


Difference



Ocean
Pacific

At atm.
heights



Tentative Conclusions

- ✧ Differences up to 1 K for air T, 2% for H₂O in some pixels
- ✧ Difference is reduced by taking quality controls and averaging but still reaching about 0.5 K in extremes near surface